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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,461	03/09/2004	Richard B. Joerger	200-66400 (PB040047AF)	2407

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EXAMINER
JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
2614	

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11/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/796,461	JOERGER, RICHARD B.	
	Examiner	Art Unit	
	Alexander Jamal	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Based upon the submitted amendment, the examiner notes that claims 1,3,7-9,11-13,16-20 have been amended and claims 21-28 have been added, and claims 4-5 have been cancelled.

2. Examiner withdraws the objections to claims 11,16,18.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1,17,19,6-8,18,20** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1, and further in view of Donovan et al. (3792470) and further in view of Bell (5930340).

As per **claim 1,** Applicant's admitted prior art Fig. 1 discloses encoding circuit 126, and a first pair of wires coupling out of controller 126. Although controller 126 only shows a

single wire in Fig. 1, examiner notes that any signaling will require a signal path and ground return path. Examiner reads the ground and signal wire as the 'first pair of wires'. Controller 126 receives battery status information from sensor 114 and outputs signalling representing battery status on line 130 (specification page 5 lines 15-30). The controller circuit 126 inherently comprises an 'encoding circuit' for the purpose of generating status signaling to the controller 142. Examiner reads any signaling as comprising one or more frequency components (tones). However, applicant's admitted prior art does not disclose that each battery status is associated with a single tone and that the tones may be transmitted simultaneously on the first pair of wires.

Donovan teaches a system for sending multiplexed alarm status signals over a telephone line. Donovan teaches the advantage that tones associated with status signals may be transmitted simultaneously for the advantage of (Col 1 line 55 to Col 2 line 10) reducing the number or expensive lines needed to transmit all the status signals. It would have been obvious to one of ordinary skill in the art at the time of this application to use multiplexed (simultaneously output) tone signals for the status signaling for the advantage of minimizing the number of lines required.

Bell discloses that it is desirable to leverage existing copper infrastructure by multiplexing various functions together on a common subscriber line where each function has signaling in different frequency bands (Col 1 lines 25-40). Bell discloses that one subscriber line may be used to transmit at least two signaling protocols with each protocol isolated so as to only couple to the correct terminals (Figs. 1 and 2). Examiner draws the standard telephone 'voice signaling' of Bell to applicant's admitted prior art 'power

signaling' supplied on applicant's pair 110B (an existing copper pair) in Fig. 1. It would have been obvious to one of ordinary skill in the art at the time of this application that the existing copper infrastructure could be used to multiplex signaling protocols at different frequencies (such as the disclosed DC power signal and the 'tone signaling' performed by applicant's Fig. 1 Controller 126), in order to make use of the existing copper infrastructure.

As per **claim 17,** it is rejected as per the claim 1 rejection. Applicant's Fig. 1 discloses voltage sensor 124 signaling controller 126. Bell discloses low pass filter 311 coupled to the low frequency signaling terminal (Fig. 3). Applicant's Fig. 1, in view of Donovan and Bell's teachings would have lowpass filtering at all of the low frequency (DC) terminals (battery output, power supply output, ONT power supply components 134,136, voltage sensor 124) and high pass filtering at all of the high frequency terminals.(battery status controllers 126,142). Examiner further contends it would have been obvious to one skilled in the art to use the appropriate filter type for each specific signal frequency used (such as DC or tone frequencies).

As per **claim 19,** it is rejected as per the claim 1 and 17 rejections. Applicant's Fig. 1 discloses charge control 122 which may couple or uncouple the battery voltage to the subscriber line.

As per **claims 21,25,27,** it is rejected as per the claim 19 rejection. The system of Donovan is not required to transmit the tone simultaneously and may only transmit a single tone.

As per **claim 6,** Applicant's admitted prior art and Donovan and Bell disclose the multiplexed signaling on the subscriber line, and Bell discloses highpass (data band) and lowpass (voice band) filters coupled to each terminal that is coupled to the subscriber line (Figs. 1 and 2). Applicant's Fig. 1 discloses controller 126 that sends control signaling over a first pair of wires (a signal path and a ground return path) that is coupled to the second pair 110B via a filter as taught by Bell.

As per **claim 7,** Bell discloses low pass filter 311 coupled to the low frequency signaling terminal (Fig. 3). Applicant's Fig. 1, in view of Donovan and Bell's teachings would have lowpass filtering at all of the low frequency (DC) terminals (battery output, power supply output, ONT power supply components 134,136, voltage sensor 124) and high pass filtering at all of the high frequency terminals.(battery status controllers 126,142).

As per **claim 8,** applicant's Fig. 1 discloses power supply 114 that converts the AC input 115 to DC voltage coupled to the second pair of wires via a third pair of wires (outputting from the power supply). As per applicant's claims, there is anther claimed 'second pair of wires'. This is also disclosed in applicant's Fig. 1 as the additional pair that is coupled to the telephone.

As per **claims 18,20,22,23,24,26,28,** they are rejected as per the claim 17 rejection. Also, applicant's Fig. 1 in view of Bell's teachings, discloses voltage sensor 134 and controller 142 connected to input node N2 via the filtering components. The controller inherently comprises a status decoder for the purpose of decoding the battery status signaling sent by the controller 126.

3. **Claims 2-5,9,** rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1 in view of Donovan et al. (3792470) , in view of Bell (5930340) as applied to claims 1,6-8,21 and further in view of DeCramer et al. (20020041676).

As per **claims 2,** Applicant's admitted prior art and Donovan and Bell disclose the multiplexed signaling on the subscriber line, and Bell discloses highpass (data band) and lowpass (voice band) filters coupled to each terminal that is coupled to the subscriber line (Figs. 1 and 2). Applicant's Fig. 1 discloses controller 126 that sends control signaling over a first pair of wires (a signal path and a ground return path) that is coupled to the second pair 110B via a filter as taught by Bell. However, Bell does not specify the actual circuit implementation of the filters.

DeCramer discloses multiplexed signaling on a subscriber line, and discloses highpass and lowpass filtering used to isolate the various terminal types from each other. DeCramer discloses highpass filter in Fig. 2 comprises capacitors 3 and 4, and lowpass filter in Fig. 3 comprising inductors L1 and L2. It would have been obvious to one of ordinary skill in the art at the time of this application to implement capacitors to the high frequency terminals and inductors to the low frequency (DC) terminals of applicant's Fig. 1, for the purpose of performing the filtering function disclosed by Bell. As such the first pair of wires outputting

from the controller will be coupled to the second pair of wires 110B (applicant's Fig. 1) via a pair of capacitors.

As per **claim 3,** the second pair of wires carried the battery dc voltage and the signaling (one or more tones). It would have been obvious (as per the claim 2 rejection) to use the appropriate frequency range filters for the specific types of signaling being used (such as DC and the tone frequencies).

As per **claims 9,10.** they are rejected as per the claim 2,7,8 rejections.

As per **claim 11,** applicant's Fig. 1 in view of Donovan and Bell's teachings, discloses voltage sensor 134 and controller 142 connected to input node N2 via the filtering components. The controller inherently comprises a status decoder for the purpose of decoding the battery status signaling sent by the controller 126.

4. **Claims 12-16** rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1 in view of Donovan et al. (3792470) in view of Bell (5930340) as applied to claims 1 and further in view of Dhara et al. (6879582).

As per **claim 12,** applicant's Fig. 1 discloses a battery with status signaling but does not specify that the battery is implemented as a UPS.

Dhara discloses a FTTH interface unit with a UPS with battery backup and status reporting (Col 6 lines 10-25). It would have been obvious to one of ordinary skill in the

art at the time of this application to implement a UPS system for the advantage of providing a power supply that is less prone to interruptions.

As per **claim 13,** it is rejected as per the claim 9 rejection.

As per **claims 14,15,** they are rejected as per the claim 8 rejection.

As per **claim 16 it is** rejected as per the claim 11 rejection.

Response to Arguments

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

As per applicant's arguments regarding claim 19, that applicant's admitted prior art does not show coupling or uncoupling the battery to the control cable, examiner notes that the charge control 122 of applicant's admitted prior art couples or uncouples the battery to a subscriber line 110. The prior art references to Bell and Donovan teach that the control signals may be coded and multiplexed on the subscriber line 110 (to which the battery is coupled or uncoupled).

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

Examiner Alexander Jamal

November 12, 2007

Melur Ramakrishnaiah

MELUR RAMAKRISHNAIAH
PRIMARY EXAMINER